

Other Companies

Olson's books contained several analyses and/or formulas designated as from other glass companies. These were probably done for comparison with the formulas Heisey was using at the same times. Spelling has been retained as originally written.

Bryce & Imperial—Low Lead

| | Batch | Glass |
|---------------------|--------|---------------------|
| Sand | 100.00 | Silica 10.00% |
| Red Lead | 13.10 | Lead Oxide 9.00% |
| Lime Carb. | 5.50 | Calcium Oxide 2.20% |
| Magnesium..... | 5.20 | Magnesium 1.60% |
| Soda Ash..... | 31.00 | Sodium Oxide 13.70% |
| Potash..... | 6.25 | Potash 2.50% |
| Butre | 4.00 | |
| Manganese | 9.5 | |
| Powdered Blue | q.s. | |

U.S. & Fostoria use Cerium. Bryce use Manganese & cobalt.

Cambridge Glass Co.

Ruby Glass (H. H.) 6-1-40

| | | | |
|-------------------------|------|-----|-----|
| Sand | 400# | 400 | 400 |
| Soda | 170 | 180 | 190 |
| Potash..... | 20 | 30 | 40 |
| Selenium | 6 | 7 | 6¼ |
| Cad. Sulphide | 11 | 11 | 10 |
| Fluorspar | 2 | 2 | --- |
| Borax | 8 | 8 | 8 |
| Zinc Oxide..... | 60 | 60 | 60 |
| Copper Oxide Burnt..... | 3 | 3 | 3 |

½ cullet

Cambridge, U.S. Glass, Bryce

| | Cambridge | U.S. | Bryce |
|----------------------|-----------|-----------------------|-----------|
| Sand | 67.66 | 68.30 | 71.25 |
| Lead | 15.75 | 10.59 | 7.64 |
| Calcium Oxide..... | .50 | 2.27 | 2.41 |
| Magnesium Oxide..... | .52 | 12 | 1.20 |
| Soda | 8.92 | 11.80 | 9.66 |
| Potash..... | 5.05 | 6.00 | 6.76 |
| | Manganese | Manganese & Cerium | Manganese |

Central Glass

Blown Lead Batch for French Tumblers & Stemware. This is used at Central, Wheeling, W. Va.

| | |
|----------------------------|--------------|
| Sand | 800# |
| Soda Ash..... | 125 |
| Pearl Ash..... | 150 |
| Lime..... | 45 |
| Lead | 120 |
| Nitre..... | 26 |
| Bone Ash..... | 2 |
| Arsenic..... | 3 |
| Manganese | 1 |
| Powdered Blue | 1 oz. |

This has been tried & is good.

English Batch—Good 6-1-40

From Carl Reed, Lancaster, Ohio

| | | |
|---------------------|------|-------|
| Sand | 2000 | 64% |
| Red Lead | 400 | 12.6% |
| Soda Ash | 400 | 8.7% |
| Zinc Oxide..... | 135 | 4.5% |
| Dolomite Lime | 100 | 3.3% |
| Potash..... | 350 | 6.4% |
| Nitre..... | 100 | --- |
| Arsenic..... | 4 | --- |

Fostoria May 4th, 1945

| | |
|----------------------------|-------|
| Silica Dioxide..... | 65.95 |
| Lead Oxide..... | 18.97 |
| Iron & Aluminum Oxide..... | 0.17 |
| Zinc Oxide..... | none |
| Calcium Oxide..... | trace |
| Magnesium Oxide..... | trace |
| Sodium Oxide..... | 5.68 |
| Potassium Oxide..... | 9.28 |

Fostoria—Low Lead Glass 3-30-50

| | Batch | Glass |
|-------------------------|--------|-----------------------|
| Sand | 100.00 | Silica 65.00% |
| Red Lead | 19.00 | Red Lead Oxide 12.10% |
| Calcium Carbonate | 9.60 | Soda 12.40% |
| Soda Ash..... | 30.00 | Potash 5.00% |
| Nitre..... | 5.00 | Calcium Oxide 3.50% |
| Arsenic..... | 1 oz. | |
| Manganese | q.s. | |
| Powdered Blue | q.s. | |

Fostoria—High Lead 3-30-50

| | Batch | Glass |
|---------------------|---------|-----------------|
| Sand | 100.00# | Silica 65.00% |
| Red Lead | 28.25 | Red Lead 17.80% |
| Soda Ash..... | 12.33 | Soda 6.10% |
| Potash..... | 25.00 | Potash 9.40% |
| Nitre..... | 6.00 | |
| Arsenic..... | 1 oz. | |
| Manganese | q.s. | |
| Powdered Blue | q.s. | |

Fostoria, US Glass—Tiffin 1-26-50

| | Fostoria | U.S. Glass Tiffin Ohio |
|---------------------------|----------|---------------------------|
| Sand | 406 | 406 |
| Lead | 55 | 70 |
| Soda | 90 | 100 |
| Potash..... | 60 | 60 |
| Calcium Carbonate | 24 | 10 |
| Magnesium Carbonate | 24 | 6 |
| Nitre..... | 15 | 25 |

Fostoria, Steuben Oct. 1948

| | Fostoria | Steuben |
|------------------------|------------|---------|
| SiO ₂ | 65.90..... | 54.85 |
| PbO..... | 18.97..... | 30.23 |
| CaO..... | Trace..... | --- |
| Na ₂ O..... | 5.68..... | 1.75 |
| K ₂ O..... | 9.28..... | 12.99 |

Gillinder, Philadelphia PA

Gold Ruby

| | | |
|---------------------------|------------|--------|
| Sand..... | 250#..... | 25# |
| Lead..... | 250#..... | 25# |
| Potash..... | 20#..... | 2# |
| Nitre..... | 30#..... | 3# |
| White Oxide Antimony..... | 7#..... | 11 oz. |
| Manganese..... | 3#..... | 5 oz. |
| Gold..... | 16 PW..... | 1½ PW |

A little more manganese to keep from turning blue.

Holophane—Red

| | |
|-----------------------|--------|
| Sand..... | 1000# |
| Soda..... | 400# |
| Lime..... | 100# |
| Nitre..... | 70# |
| Selenite of Soda..... | 50 oz. |
| Selenite Stick..... | 12 oz. |

Holophane Shades Crystal 7-18-55

| | |
|----------------------------|----------|
| Sand..... | 702 |
| Soda..... | 197 |
| Potash..... | 45 |
| Nitre..... | 38 |
| Calcium Carbonate..... | 116 |
| Borax..... | 1 |
| Sodium Silicofluoride..... | 1½ |
| Arsenic..... | ½ |
| Powdered Blue..... | 2/10 grs |
| Titanium Oxide..... | 3 |
| Lead Mono..... | 3 |

Annealing hot zone 960 980

Time 3½ hours

Holophane Shade Bu-Ti-Glo 9-9-55

| | |
|--------------------------|-----------------|
| Sand..... | 650 |
| Soda Ash..... | 247 |
| Lime..... | 58½ |
| Borax..... | 10-6 oz. |
| Feldspar..... | 36-8 oz. |
| Sodium Nitrate..... | 16-4 oz. |
| Flurospar..... | 3-4 oz. |
| Antimony..... | 2-4 oz. |
| Neodymium Oxalate..... | 3-4 oz. |
| Neodymium Carbonate..... | 30-3 oz. |
| Total Batch | 1057½ |
| Total Glass | 910 lbs. |
| Cullet..... | 500 |

Lalique—White Glass

| | |
|----------------|-----|
| Sand | 100 |
| Soda | 37 |
| Borax | 7½ |
| Nitre | 4 |
| Lime | 6 |
| Bone Ash | 6 |
| Arsenic | ½# |

Lancaster Hocking Glass**Sahara**

| | |
|----------------------|------|
| Sand | 800# |
| Titanium Oxide | 89# |
| Cerium Hydrate | 21# |

Carl Reed—In Furnace Now 7-20-50

| | | |
|------------------------------|----------|-------------------------|
| Sand | 400 | SiO ₂ 70% |
| Red Lead | 55 | PbO 9% |
| Calcium Carbonate | 22 | CaO 2.2% |
| Magnesium Oxide | 21 | MgC 1.8% |
| Soda | 124 | Na ₂ O 13.7% |
| Potash | 25 | K ₂ O 2.5% |
| Nitre | 16 | |
| Neodymium | 10 oz. | |
| Powdered Blue | 3/10 oz. | |
| Potassium Permanganate | ½# | |

[Apparently this was used at Heisey, but is included in this grouping because of the analysis.]

The following is a handwritten, undated analysis report to the Heisey company about the glass made by several companies.

Fostoria

We have several analyses of Fostoria glass which shows the following.

| | |
|------------------|-------|
| Silica | 65.0% |
| Lead Oxide | 18.0 |
| Soda | 6.1 |
| Potasia | 9.4 |

The batch to produce this would be

| | |
|---------------------|--------|
| Sand | 100.00 |
| Red Lead | 28.25 |
| Soda Ash | 12.33 |
| Potash | 28.00 |
| Nitre | 5.00 |
| Arsenic | 1 oz. |
| Manganese | q. s. |
| Powdered Blue | q. s. |

We also have had several glasses of this composition.

| | |
|---------------------|---------|
| Silica | 65.0 |
| Lead Oxide | 12.0 |
| Calcium Oxide | 3.0 |
| Soda | 12.4 |
| Potasia | 5.0 |
| Manganese | Present |
| Arsenic | |

The Batch to produce this glass would be

| | |
|-------------------------|-------|
| Sand | 100.0 |
| Red Lead | 19.0 |
| Calcium Carbonate | 9.6 |

Soda 30.0
 Potash..... 13.3
 Nitre..... 5.0
 Arsenic 1 oz.
 Potassium Permanganate..... q.s.
 Powdered Blue q.s.
 Neodymium..... q.s.

We know from analysis we have made that Bryce and Imperial are each making a low lead glass, very much along the line of the meth formula, that is an Equi-mal ratio of Soda and Potash. These glasses analyzed as follows.

Silica 70.0%
 Lead Oxide 9.0
 Calcium Oxide..... 2.4
 Magnesium Oxide..... 1.8
 Soda 9.7
 Potassia 6.5
 Manganese Present
 Arsenic..... “

The batch to produce this glass would be

Sand 100.0#
 Red Lead 13.1
 Burned Lime..... 6.1
 Soda Ash..... 19.5
 Potash..... 16.0
 Nitre..... 4.0
 Arsenic 1 oz.
 Manganese q.s.
 Powdered Blue q.s.

We believe the benefiatory effect of Potassia in a soda glass has reached its maximum at from 2 to 3% and think a batch such as this would be less corrosive.

Sand 100.0
 Red Lead 13.1
 Lime Carbonate 5.5
 Magnesium Carbonate 5.2
 Soda Ash..... 31.1
 Potash..... 6.0
 Nitre..... 4.0
 Arsenic 1 oz.
 Potassium Permanganate..... q.s.
 Powdered Blue q.s.
 Neodymium..... q.s.

This glass composition would be

Silica 70.0
 Lead Oxide 9.0
 Calcium Oxide..... 2.4
 Magnesium Oxide..... 1.8
 Sodium Oxide..... 13.7
 Potassium Oxide..... 2.5

This has the same silica, lead and total lime content. Also the total alkali is the same. The difference being 4% less Potassium Oxide but 4% more Soda.